

# ***Strategic Goal: Reduction of Global and Cross-Border Environmental Risks***

The United States will lead other nations in successful, multilateral efforts to reduce significant risks to human health and ecosystems from climate change, stratospheric ozone depletion, and other hazards of environmental concern.

## **BACKGROUND AND CONTEXT**

Air, water, and waste pollution crossing our borders with Mexico and Canada can imperil the health, environment and well-being of people in the United States. Thus, international cooperation is critical to achieving EPA's mission.

Depletion of the stratospheric ozone layer increases the amount of the sun's ultraviolet radiation reaching the earth's surface. Climate change, pollution of the oceans and irreversible loss of species and habitats worldwide undermine the resource base critical to our well-being and quality of life and deprive us of commercially

valuable and potentially life-saving genetic materials. EPA's continued leadership is necessary to build the international cooperation and technical capacity that are essential to prevent harm to the global environment and ecosystems that we share with other nations.

A coordinated international response is needed to confront the climate change threat, depletion of the stratospheric ozone layer, transboundary circulation of toxics, and other environmental issues significant to the interests of the United States.

## **MEANS AND STRATEGY**

Ecosystems and transboundary pollutants pose serious environmental hazards to people, communities and wildlife. These transboundary pollutants are transported through air, water and toxic substances and are not confined by international boundaries. As a result, domestic actions alone are inadequate to achieve some of EPA's most important environmental goals.

To achieve our Agency goal of reducing cross-border environmental risks requires us to work with other countries to address external sources of pollution impacting human health and the environment of our nation.

EPA will use a variety of approaches to prevent harm to the global environment and ecosystems including:

- 1) formal bilateral and multilateral environmental agreements, environmental foreign policy initiatives, and regional and global negotiations;

- 2) cooperating with other countries to ensure that domestic and international environmental laws, policies, and priorities are recognized and implemented;

3) working with other federal agencies, states, business, and environmental groups to promote the flow of environmentally sustainable technologies and services worldwide, facilitating cooperative research and development programs and international technical assistance, training and information exchange; and

4) promoting public/private partnership programs to reduce greenhouse gas emissions.

## Research

EPA's Global Change Research Program is currently undergoing a major redirection towards a more assessment-oriented program, with primary emphasis on understanding the potential consequences of climate variability and change on human health, ecosystems, and socioeconomic systems in the United States. EPA will also make assessments of opportunities to reduce the risks or take advantage of the opportunities presented by climate variability and change.

## STATUTORY AUTHORITY

- 1990 Great Lakes Critical Programs Act
- Clean Water Act (CWA) (33 U.S.C. 1251-1387)]
- Clean Air Act (CAA) Title VI, Parts A and D (42 U.S.C. 7401-7431, 7501-7515)
- Clean Water Act, 33 U.S.C. 1251 et seq. - Section 104
- Pollution Prevention Act of 1990, 42 U.S.C. 13101 et seq. - Sections 6602, 6603, 6604, 6605
- Solid Waste Disposal Act, 42 U.S.C. 6901 et seq. - Section 8001
- National Environmental Policy Act of 1969, 42 U.S.C. 4321 et seq. - Section 102
- Global Climate Protection Act of 1987, 15 U.S.C. 2901 - Section 1103
- Federal Technology Transfer Act, 15 U.S.C. - Section 3710a
- U.S. Global Change Research Program Act of 1990
- United Nations Framework Convention on Climate Change
- National Climate Program Act (1997)
- Pollution Prevention Act (PPA) (42 U.S.C. 13101-13109)
- Resource Conservation and Recovery Act (RCRA) sections 3001-3006 and 3017 (42 U.S.C. 6921-6926, 6938)
- The Montreal Protocol on Substances that Deplete the Ozone Layer
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)
- Emergency Planning and Community Right-to-Know Act (EPCRA) section 313 (42 U.S.C. 11023)
- Toxic Substances Control Act (TSCA) sections 4, 5, 6, 12, and 13 (15 U.S.C. 2603, 2604, 2605, 2611, 2612)
- Federal Food, Drug and Cosmetic Act (FFDCA).
- North American Agreement on Environmental Cooperation (NAAEC)
- 1996 Habitat Agenda, paragraph 43bb
- U.S./Canada Agreements on Arctic Cooperation
- 1989 US/USSR Agreement on Pollution
- 1991 U.S./Canada Air Quality Agreement World Trade Organization Agreements
- World Trade Organization Agreements
- North American Free Trade Agreement
- North American Agreement on Environmental Cooperation
- Treaties: The Boundary Waters Treaty of 1909 and 1987 Great Lakes Water Quality Agreement

## *Resource Summary*

(Dollars in thousands)

	<b>FY 1999 Pres. Budget</b>	<b>FY 1999 Enacted</b>
<b>Reduction of Global and Cross-border Environmental Risks</b>	<b>\$398,286.4</b>	<b>\$229,366.9</b>
Reduce Transboundary Threats: Shared North American Ecosystems	\$120,392.3	\$71,025.9
EPM	\$20,392.3	\$21,025.9
STAG	\$100,000.0	\$50,000.0
Climate Change	\$232,960.4	\$127,968.9
EPM	\$163,237.5	\$74,347.9
S&T	\$69,722.9	\$53,621.0
Stratospheric Ozone Depletion	\$26,914.3	\$17,033.8
EPM	\$26,914.3	\$17,033.8
Protect Public Health and Ecosystems From Persistent Toxics	\$6,883.2	\$4,125.8
EPM	\$6,883.2	\$4,125.8
Achieve Cleaner and More Cost-Effective Practices	\$11,136.2	\$9,212.5
EPM	\$11,136.2	\$9,212.5
Total Workyears:	530.2	522.4

## Strategic Objective: Reduce Transboundary Threats – Shared North American Ecosystems

### *Key Programs*

(Dollars in thousands)

	<b>1999 Pres Bud</b>	<b>1999 Enacted</b>
Great Lakes National Program Office (CWAP)	\$13,315	\$14,615
Water Infrastructure: Mexico Border	\$100,000	\$50,000
U.S. - Mexico Border	\$4,707	\$10,643
Partnership with Industrial and Other Countries	\$1,642	\$784

### *Annual Performance Goals and Measures*

#### **MEXICAN BORDER**

**By 1999:** 1 additional water/wastewater projects along the Mexican border will be certified for design-construction.

#### **Performance Measures:**

#### **Target:**

Projects certified for design-construction along the Mexican Border

1 Project

**Baseline:** As of 1998, 24 Mexican border projects were either certified for design-construction or had received grants or IAGs.

## Strategic Objective: Climate Change

### *Key Programs*

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
Climate Change Technology Initiative: Buildings	\$78,100	\$38,800
Climate Change Technology Initiative: Transportation	\$58,900	\$31,750
Climate Change Technology Initiative: Industry	\$51,600	\$18,600
Climate Change Technology Initiative: Carbon Removal	\$3,400	\$0
Climate Change Technology Initiative: State and Local Climate Change Program	\$5,000	\$2,900
Climate Change Technology Initiative: International Capacity Building	\$8,400	\$7,400
Partnership with Industrial and Other Countries	\$160	\$409
Research: CCTI RESEARCH (Office of Air and Radiation)	\$0	\$10,000
Research: Climate Change Research	\$22,817	\$16,671

## *Annual Performance Goals and Measures*

### U.S. GREENHOUSE GAS EMISSIONS

**By 1999:** Reduce U.S. greenhouse gas emissions by 35 million metric ton carbon equivalent (MMTCE) per year through partnerships with businesses, schools, state and local governments, and other organizations.

Performance Measures:	Target:
Methane Programs - Annual Greenhouse Gas Reductions	8.5 MMTCE
HFC/PFC Programs - Annual Greenhouse Gas Reductions	11.5 MMTCE
ENERGY STAR Buildings and Green Lights - Annual Greenhouse Gas Reductions	3.9 MMTCE
ENERGY STAR Labeled Products - Annual Greenhouse Gas Reductions	4.8 MMTCE
Annual Greenhouse Gas Reduction (Climate Wise) – Production of 1999 US Greenhouse Gas Inventory.	4.4 MMTCE
Annual Greenhouse Gas Reductions (Transportation)	1.9 MMTCE

**Baseline:** The baseline for evaluating program performance is a forecast of U.S. greenhouse gas emissions in the absence of the Climate Change Action Plan programs. The baseline was developed as part of an interagency evaluation of the Climate Change Action Plan in 1997, which built on a similar baseline forecast that was developed in 1993 for the Climate Change Action Plan. The updated baseline includes updated energy forecasts and economic growth projections. The baseline is discussed at length in the Climate Action Report 1997, which includes a discussion of differences in baselines between the original Climate Change Action Plan and the 1997 baseline update.

#### **RESEARCH: CLIMATE CHANGE ASSESSMENT**

**By 1999:** Conduct preliminary assessment of consequences of climate change at three geographical locations: (Mid-Atlantic, Gulf Coast, and upper Great Lakes).

##### **Performance Measures:**

Conduct preliminary assessment of regional scale consequences of climate change at three geographic locations (Mid-Atlantic, Gulf Coast, and upper Great Lakes).

##### **Target:**

09/30/99  
assessment

**Baseline:** Development of "formal" baseline information for EPA research is currently underway.

## Strategic Objective: Stratospheric Ozone Depletion

### *Key Programs*

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
Multilateral Fund	\$21,000	\$11,362
EMPACT	\$382	\$671
Partnership with Industrial and Other Countries	\$160	\$337

### *Annual Performance Goals and Measures*

#### **CFC AND HALON REDUCTION**

**By 1999:** Ensure that domestic consumption of class II HCFCs will be restricted to below 208,400 MTs and domestic exempted production and import of newly produced class I CFCs and halons will be restricted to below 130,000 MTs.

#### **Performance Measures:**

#### **Target:**

Domestic Consumption of Class II HCFCs	<208,400 MTs
Domestic Exempted Production and Import of Newly Produced Class I CFC s and Halons	<130,000 MTs

**Baseline:** The base of comparison for assessing progress on the annual erformance goal is the domestic consumption cap of class II HCFCs as set by the Parties to the Montreal Protocol. Beginning on January 1, 1996, the cap was set at the sum of 2.8 percent of the domestic ozone depletion potential (ODP)-weighted consumption of CFCs in 1989 plus the ODP-weighted level of HCFCs in 1989. Consumption equals production plus import minus export.

## Strategic Objective: Protect Public Health and Ecosystems From Persistent Toxics

### *Key Programs*

(Dollars in thousands)

	<b>1999 Pres Bud</b>	<b>1999 Enacted</b>
Global Toxics	\$3,312	\$932
Partnership with Industrial and Other Countries	\$0	\$100

### *Annual Performance Goals and Measures*

#### **PERSISTENT ORGANIC POLLUTANTS**

**By 1999:** Obtain international agreement on criteria for selecting Persistent Organic Pollutants (POPs) to be covered in a new global POPs treaty, and on capacity building activities to support the convention's implementation

#### **Performance Measures:**

Agreed USG policies on selection criteria for Persistent Organic Pollutants

#### **Target:**

09/30/99  
negotiations

**Baseline:** POPs treaty negotiations are underway. Anticipate negotiations concluded 2001. Treaty ratification 2003-2005.



## Strategic Objective: Achieve Cleaner and More Cost-Effective Practices

### *Key Programs*

(Dollars in thousands)

	1999 Pres Bud	1999
<b>Enacted</b>		
Environment and Trade	\$3,178	\$4,515
Partnership with Industrial and Other Countries	\$7,800	\$4,547

### *Annual Performance Goals and Measures*

#### INTERNATIONAL TRAINING MODULES, ENVIRONMENTAL TECHNOLOGIES EXPORTS

**By 1999:** Deliver 30 international training modules; implement 6 tech assistance/ technology dissemination projects; implement 5 co-op policy development project; & disseminate info products on US environmental technologies and techniques to 2500 foreign customers

Performance Measures:	Target:
Number of training modules delivered	30 modules
Number of tech assistance or tech dissemination projects carried-out	6 projects
Number of info products disseminated to foreign customers	2500 products
Number of capacity building activities scheduled for initiation in FY 2000 and beyond	2 reports

**Baseline:** During FY 1999, deliver 30 international training modules; implement 6 technical assistance or technology dissemination projects; implement 5 cooperative policy development projects; and disseminate information products on US environmental technologies and techniques to 2,500 foreign customers. The purpose of these programs will be to reduce air, water, and waste problems in at least 6 environmentally and geopolitically significant countries and to improve the cost-effectiveness of U.S. domestic programs.

## EXTERNAL FACTORS

The success of EPA's programs and activities under Goal 6 will depend on active participation by other nations, both developed and developing countries. Reduction of air, water, and waste problems along with the U.S. border with Mexico will require continued commitment by national, regional and local environmental officials in that country.

Similarly, EPA's efforts to reduce global and regional threats to oceans and the atmosphere will require active cooperation of other countries. Health and environmental benefits resulting from the multi-billion dollar U.S. investment to reduce emissions of stratospheric ozone depleting compounds could be completely undone by unabated emissions of these chemicals in other countries.

Fortunately, the Montreal Protocol on Substances that Deplete the Ozone Layer has secured the participation of most countries,

including major producers and consumers of these chemicals.

While many factors outside of EPA or U.S. control determine a nation's willingness to participate in international environmental protection efforts (e.g., economic or political considerations within the country), EPA's international policy and technical exchange programs can play an important role in convincing particular nations of both the need and feasibility of participating.

Other factors affecting EPA's programs under Goal 6 include continued Congressional and public support; cooperation with other Federal agencies, such as the State Department and the U.S. Agency for International Development; and collaboration with state and local groups, business and industry groups, and environmental organizations.

## VERIFICATION AND VALIDATION OF PERFORMANCE MEASURES

Performance measures for the Great Lakes program are derived from open lake measurements taken by GLNPO and from annual programmatic analysis of activities pursuant to the Great Lakes Water Quality Agreement, the Binational Toxics Strategy, and the GLNPO programs for information management, sediments, and habitat. Individual projects which generate are required to comply with the Agency's standards for quality assurance and control. Project data is entered into the Great Lakes Environmental Monitoring Database (GLEND), and project information generated through grants and contracts.

A QA/QC tracking system is in place to ensure that QA/QC requirements are part of all applicable GLNPO projects. GLNPO uses its annual planning process as a check on performance from indirect

performance measures. The GLNPO performance measures are written into Great Lakes State Environmental Performance Partnership Agreements as commitments.

GLNPO provides the states with assessments of progress against those commitments. Under the GLNPO structure, each of the GLNPO programs conducts an end of year review of its progress regarding identified measures and activities, draws conclusions, and makes recommendations to management regarding the subsequent year's activities and measures. Management ultimately determines what the activities and measures will be for the succeeding year.

EPA has several strategies to validate and verify performance measures for the Climate change Program. At the national level, the primary mechanism for monitoring overall changes in

greenhouse gas emissions is the annual greenhouse gas inventory that is developed by EPA in coordination with other government agencies and departments. The EPA greenhouse gas inventory serves as the official U.S. government submission to the United Nations.

Within the voluntary programs, EPA monitors and evaluates accomplishments based on extensive information provided by partners. For example, the Green Lights partners provide detailed information on investments and energy savings from over 14,000 completed energy-efficiency projects (e.g., the annual kilowatt-hour savings from completed lighting upgrades). These standardized reports on energy efficiency projects can be easily translated into annual emission reductions by applying the appropriate emission factor (lbs/kWh) for each pollutant of concern.

The voluntary programs continually use the information collected to improve the programs' performance and more accurately assess its future potential.

Another measure of progress for the voluntary programs is obtained by using the Voluntary Reporting of Greenhouse Gases Program developed by the Energy Information Agency under the 1992 Energy Policy which reports the results and achievements of individual companies. Through this program, companies submit reports directly to the Energy Information Agency which reviews them for accuracy and to ensure plausibility.

Stratospheric ozone measurements are based on atmospheric models and data provided by the National Aeronautics and Space Administration (NASA), National Oceanic and Atmospheric Administration (NOAA), the World Meteorological Organization, and the United Nations Environment Programme (UNEP) where available. Actual measurements of stratospheric ozone will be made by NASA's Upper Atmospheric Research Satellite and the Total Ozone Mapping Spectrometer, and

also by the Solar Backscatter Ultraviolet Spectrometer-2 and Operational Vertical Sounder instruments on the NOAA Polar Orbiting Environmental Satellite and subsequent National Polar-orbiting Operational Environmental Satellite.

Progress on the restriction of domestic exempted production and importation of newly produced class I CFCs, halons, methyl chloroform, carbon tetrachloride, and HBFCs, will be tracked by monitoring industry reports in compliance with EPA's phaseout regulations. Progress on the restriction of domestic production and importation of methyl bromide and class II HCFCs will be tracked by monitoring industry reports in compliance with EPA's phaseout regulations.

Production data is cross-checked through facility inspections and comparison with International Trade Commission data. Import data is cross-checked by comparison with U.S. Customs information. Results from the tracking system are compiled and published in annual UNEP reports.

Progress on international implementation goals will be measured by tracking the number of countries receiving assistance, dollars allocated to each, and the expected reduction in ODSs in assisted countries.

The annual performance goals and measures identified under this objective are expressed as the completion of explicit tasks. These measures require assessment by program staff and management. Verification of these measures does not involve any pollutant database analysis, but will require objective assessment of tasks completed, compliance with regulatory development and authority delegation schedules, and the satisfaction of U.S. environmental negotiating objectives.

## Research

EPA has several strategies to validate and verify performance measures in the area of environmental science and technology research. Because the major output of research is technical information, primarily in the form of reports, software, protocols, etc., key to these strategies is the performance of both peer reviews and quality reviews to ensure that requirements are met.

Peer reviews provide assurance during the pre-planning, planning, and reporting of environmental science and research activities that the work meets peer expectations. Only those science activities and resulting information products that pass Agency peer review are addressed and published. This applies to program-level, project-level, and research outputs. The quality of the peer review activity is monitored by EPA to ensure that peer reviews are performed consistently, according to Agency policy, and that any identified areas of concern are resolved through discussion or the implementation of corrective action.

The Agency's expanded focus on peer review helps ensure that the performance measures listed here are verified and validated by an external organization. This is accomplished through the use of the Science Advisory Board (SAB) and the Board of Scientific Counselors (BOSC). The BOSC, established under the Federal Advisory Committee Act, provides an added measure of assurance by

examining the way the Agency uses peer review, as well as the management of its research and development laboratories.

In 1998, the Agency presented a new Agency-wide quality system in Agency Order 5360.1/chg 1. This system provided policy to ensure that all environmental programs performed by or for the Agency be supported by individual quality systems that comply fully with the American National Standard, *Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs* (ANSI/ASQC E4-1994).

The order expanded the applicability of quality assurance and quality control to the design, construction, and operation by EPA organizations of environmental technology such as pollution control and abatement systems; treatment, storage, and disposal systems; and remediation systems. This rededication to quality provides the needed management and technical practices to assure that environmental data developed in research and used to support Agency decisions are of adequate quality and usability for their intended purpose.

A quality assurance system is implemented at all levels in the EPA research organization. The Agency-wide quality assurance system is a management system that provides the necessary elements to plan, implement, document, and assess the effectiveness of quality assurance and quality control activities applied to environmental programs conducted by or for EPA. This quality management system provides for identification of environmental programs for which Quality Assurance/Quality Control (QA/QC) is needed, specification of the quality of the data required from environmental programs, and provision of sufficient resources to assure that an adequate level of QA/QC is performed.

Agency measurements are based on the application of standard EPA and ASTM

methodology as well as performance-based measurement systems. Non-standard methods are validated at the project level. Internal and external management system assessments report the efficacy of the management system for quality of the data and the final research results. The quality assurance annual report and work plan submitted by each organizational unit provides an accountable mechanism for quality activities. Continuous improvement in the quality system is accomplished

through discussion and review of assessment results.

The Office of Research and Development Management Information System (OMIS) will be another accountability tool used to monitor and track performance measures. The GPRA structure will be incorporated into OMIS to ensure consistent maintenance and reporting, resulting in greater accuracy and consistency of information to users.